

WHAT IS CLAIMED IS:

1. A method for sampling a digital signal yielding improved jitter performance within prescribed bandwidth constraints, comprising the steps of:

5 periodically sampling the digital signal n times during every interval t , with n chosen such that $\log_2(n+1)$ is an integer (x) greater than zero;

generating a $x+1$ -bit sample value after each interval t , the sample value having a first bit indicating the value of the digital signal being sampled, and x remaining bits which collectively indicate a sample interval during which the digital signal changed states if such a change did occur, and

10 inverting the first bit of each sample value upon decoding to coincide with the change in the digital signal.

2. The method according to claim 1 wherein $n=15$ and x equals 4.

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3. Apparatus for sampling a digital signal yielding improved jitter performance within prescribed bandwidth constraints, comprising of:

a sample clock for generating n periodic clock pulses during every interval t , with n chosen such that $\log_2(n+1)$ is an integer (x) greater than zero;

20 a receiver for generating a $x+1$ -bit sample value after each interval t , the sample value having a first bit indicating the value of the digital signal being sampled, and x remaining bits which collectively indicate a sample interval during which the digital signal changed states if such a change did occur, and the receiver inverting the first bit of each sample value upon decoding to coincide with the change in the digital signal.

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4. The apparatus according to claim 1 wherein $n=15$ and x equals 4.